AIR QUALITY PERMIT

Issued To:	Bitter Creek Pipelines, LLC Decker 17 Battery Environmental and Pipeline Integrity Department, WBI Holdings, Inc. P.O. Box 131 Glendive, MT 59330	Permit: #4066-00 Application Complete: 03/21/07 Preliminary Determination Issued: 04/19/07 Department's Decision Issued: 05/07/07 Permit Final: 05/23/07 AFS #: 003-0036

An air quality permit, with conditions, is hereby granted to Bitter Creek Pipelines, LLC (BCPL), pursuant to Sections 75-2-204 and 211 of the Montana Code Annotated (MCA), as amended, and Administrative Rules of Montana (ARM) 17.8.740, *et seq*., as amended, for the following:

SECTION I: Permitted Facilities

A. Permitted Equipment

Permit #4066-00 is issued to BCPL for the construction and operation of a coal bed methane natural gas compressor station and associated equipment. The facility is known as the Decker 17 Battery. A complete list of the permitted equipment is contained in Section I.A of the permit analysis.

B. Plant Location

The facility is located approximately 11 kilometers northeast of Decker, Montana. The legal description of the site location is the NW¼ of Section 17, Township 9 South, Range 41 East, Big Horn County, Montana.

SECTION II: Conditions and Limitations

A. Emission Limitations

1. BCPL shall not operate more than four natural gas compressor engines at any given time and the maximum-rated design capacity of each engine shall not exceed 860-brake horsepower (bhp) (ARM 17.8.749).

2. The combined maximum-rated design capacity of all engines operated at the facility shall not exceed 1,720-bhp and only the following engines may be used (ARM 17.8.749):

   - Caterpillar G3408 TA (400-bhp rich-burn);
   - Waukesha F18 GL (400-bhp lean-burn)
   - Caterpillar G3508LE (633-bhp lean-burn)
   - Waukesha 3524 GSI (840-bhp rich-burn); and
   - Caterpillar 3512LE (860-bhp lean-burn).

3. Emissions from any rich-burn natural gas compressor engine shall be controlled by the use of a non-selective catalytic reduction (NSCR) unit and an air-to-fuel ratio (AFR) controller. The pound per hour (lb/hr) emission limits for the engines shall be determined using the following equation and pollutant specific gram per brake horsepower-hour (g/bhp-hr) emission factors (ARM 17.8.752):

Equation
Emission Limit (lb/hr) = Emission Factor (g/bhp-hr) * maximum-rated design capacity of engine (bhp) * 0.002205 lb/gram

Emission Factors

Oxides of Nitrogen (NO_X):	1.0 g/bhp-hr
Carbon Monoxide (CO):	2.0 g/bhp-hr
Volatile Organic Compounds (VOC):	1.0 g/bhp-hr

4. Emissions from any Waukesha F18 GL and any Caterpillar 3512LE natural gas compressor engines shall be controlled by the use of an oxidation catalyst. The lb/hr emission limits for the engines shall be determined using the following equation and pollutant specific g/bhp-hr emission factors (ARM 17.8.752):

   Equation
   Emission Limit (lb/hr) = Emission Factor (g/bhp-hr) * maximum rated design capacity of engine (bhp) * 0.002205 lb/gram

   Emission Factors

$NO_{X:}$	1.5 g/bhp-hr
CO:	0.5 g/bhp-hr
VOC:	1.0 g/bhp-hr

5. Emissions from any Caterpillar G3508LE natural gas compressor engine shall be controlled by the use of an oxidation catalyst. The lb/hr emission limits for the engines shall be determined using the following equation and pollutant specific g/bhp-hr emission factors (ARM 17.8.752):

   Equation
   Emission Limit (lb/hr) = Emission Factor (g/bhp-hr) * maximum rated design capacity of engine (bhp) * 0.002205 lb/gram

   Emission Factors

$NO_{X:}$	2.0 g/bhp-hr
CO:	0.5 g/bhp-hr
VOC:	1.0 g/bhp-hr

6. BCPL shall not cause or authorize emissions to be discharged into the outdoor atmosphere from any sources installed after November 23, 1968, that exhibit an opacity of 20% or greater averaged over six consecutive minutes (ARM 17.8.304).

7. BCPL shall not cause or authorize the use of any street, road, or parking lot without taking reasonable precautions to control emissions of airborne particulate matter (ARM 17.8.308).

8. BCPL shall treat all unpaved portions of the haul roads, access roads, parking lots, or general plant area with water and/or chemical dust suppressant as necessary to maintain compliance with the reasonable precautions limitation in Section II.A.7 (ARM 17.8.749).

B. Testing Requirements

1. Each compressor engine operated at the site shall be initially tested and compliance demonstrated with the NO_X and CO emission limits contained in Sections II.A.3, II.A.4, or II.A.5 (as appropriate) of the permit within 180 days of initial start-up of the respective engine. After the initial source test, testing shall continue on an every 4-year basis or according to another testing/monitoring schedule as may be approved in writing by the Department of Environmental Quality (Department) (ARM 17.8.105 and 17.8.749).

2. All compliance source tests shall conform to the requirements of the Montana Source Test Protocol and Procedures Manual (ARM 17.8.106).

3. The Department may require further testing (ARM 17.8.105).

C. Operational Reporting Requirements

1. BCPL shall supply the Department with annual production information for all emission points, as required by the Department in the annual emission inventory request. The request will include, but is not limited to, all sources of emissions identified in the emission inventory contained in the permit analysis.

   Production information shall be gathered on a calendar-year basis and submitted to the Department by the date required in the emission inventory request. Information shall be in the units required by the Department. This information may be used to calculate operating fees, based on actual emissions from the facility, and/or to verify compliance with permit limitations (ARM 17.8.505).

2. BCPL shall notify the Department of any construction or improvement project conducted pursuant to ARM 17.8.745, that would include a change in control equipment, stack height, stack diameter, stack flow, stack gas temperature, source location or fuel specifications, or would result in an increase in source capacity above its permitted operation or the addition of a new emission unit. The notice must be submitted to the Department, in writing, 10 days prior to start up or use of the proposed de minimis change, or as soon as reasonably practicable in the event of an unanticipated circumstance causing the de minimis change, and must include the information requested in ARM 17.8.745(1)(d) (ARM 17.8.745).

3. All records compiled in accordance with this permit must be maintained by BCPL as a permanent business record for at least 5 years following the date of the measurement, must be available at the plant site for inspection by the Department, and must be submitted to the Department upon request (ARM 17.8.749).

D. Notification

1. BCPL shall provide the Department with written notification of commencement of construction of the Decker 17 Battery within 30 days after commencement of construction (ARM 17.8.749).

2. BCPL shall provide the Department with written notification of the actual start-up date of the compressor engines within 15 days after the actual start-up date(s) (ARM 17.8.749).

3. BCPL shall provide the Department with written notification of the engine models installed at the site within 15 days after the actual start-up date(s) of the engine(s) (ARM 17.8.749).

SECTION III: General Conditions

A. Inspection – BCPL shall allow the Department's representatives access to the source at all reasonable times for the purpose of making inspections or surveys, collecting samples, obtaining data, auditing any monitoring equipment (CEMS, CERMS) or observing any monitoring or testing, and otherwise conducting all necessary functions related to this permit.

B. Waiver – The permit and the terms, conditions, and matters stated herein shall be deemed accepted if BCPL fails to appeal as indicated below.

C. Compliance with Statutes and Regulations – Nothing in this permit shall be construed as relieving BCPL of the responsibility for complying with any applicable federal or Montana statute, rule, or standard, except as specifically provided in ARM 17.8.740, *et seq*. (ARM 17.8.756).

D. Enforcement – Violations of limitations, conditions and requirements contained herein may constitute grounds for permit revocation, penalties, or other enforcement action as specified in Section 75-2-401, *et seq*., MCA.

E. Appeals – Any person or persons jointly or severally adversely affected by the Department's decision may request, within 15 days after the Department renders its decision, upon affidavit setting forth the grounds therefor, a hearing before the Board of Environmental Review (Board). A hearing shall be held under the provisions of the Montana Administrative Procedures Act. The filing of a request for a hearing does not stay the Department's decision, unless the Board issues a stay upon receipt of a petition and a finding that a stay is appropriate under Section 75-2-211(11)(b), MCA. The issuance of a stay on a permit by the Board postpones the effective date of the Department's decision until conclusion of the hearing and issuance of a final decision by the Board. If a stay is not issued by the Board, the Department's decision on the application is final 16 days after the Department's decision is made.

F. Permit Inspection – As required by ARM 17.8.755, Inspection of Permit, a copy of the air quality permit shall be made available for inspection by the Department at the location of the source.

G. Permit Fee – Pursuant to Section 75-2-220, MCA, as amended by the 1991 Legislature, failure to pay the annual operation fee by BCPL may be grounds for revocation of this permit, as required by that section and rules adopted thereunder by the Board.

H. Construction Commencement – Construction must begin within three years of permit issuance and proceed with due diligence until the project is complete or the permit shall be revoked (ARM 17.8.762).

Permit Analysis
Bitter Creek Pipelines, LLC
Decker 17 Battery
Permit #4066-00

I. Introduction/Process Description

Bitter Creek Pipelines, LLC (BCPL) is permitted for the construction and operation of the Decker 17 Battery. The facility is a coal bed methane natural gas compressor station located approximately 11 kilometers northeast of Decker, Montana, in the NW ¼ of Section 17, Township 9 South, Range 41 East, in Big Horn County, Montana.

A. Permitted Equipment

BCPL is permitted to operate no more than four natural gas compressor engines at any given time and only 400-brake horsepower (bhp) Caterpillar G3408 TA, 400-bhp Waukesha F18 GL, 633 bhp Caterpillar G3508LE, 840-bhp Waukesha 3524 GSI, and/or 860-bhp Caterpillar 3512LE natural gas compressor engines may be used at the facility. In addition, the maximum-rated design capacity of any engine shall not exceed 860-bhp and the combined maximum-rated design capacity of all engines operated at the facility shall not exceed 1,720-bhp.

B. Source Description

The natural gas compressor engines at the Decker 17 Battery are used to gather natural gas from local field wells and transport the natural gas to an existing central compressor station.

II. Applicable Rules and Regulations

The following are partial explanations of some applicable rules and regulations that apply to the facility. The complete rules are stated in the Administrative Rules of Montana (ARM) and are available, upon request, from the Department of Environmental Quality (Department). Upon request, the Department will provide references for location of complete copies of all applicable rules and regulations or copies where appropriate.

A. ARM 17.8, Subchapter 1 – General Provisions, including but not limited to:

1. ARM 17.8.101 Definitions. This rule includes a list of applicable definitions used in this chapter, unless indicated otherwise in a specific subchapter.

2. ARM 17.8.105 Testing Requirements. Any person or persons responsible for the emission of any air contaminant into the outdoor atmosphere shall, upon written request of the Department, provide the facilities and necessary equipment (including instruments and sensing devices) and shall conduct tests, emission or ambient, for such periods of time as may be necessary using methods approved by the Department.

3. ARM 17.8.106 Source Testing Protocol. The requirements of this rule apply to any emission source testing conducted by the Department, any source or other entity as required by any rule in this chapter, or any permit or order issued pursuant to this chapter, or the provisions of the Clean Air Act of Montana, 75-2-101, *et seq*., Montana Code Annotated (MCA).

BCPL shall comply with the requirements contained in the Montana Source Test Protocol and Procedures Manual, including, but not limited to, using the proper test methods and supplying the required reports. A copy of the Montana Source Test Protocol and Procedures Manual is available from the Department upon request.

4. ARM 17.8.110 Malfunctions. (2) The Department must be notified promptly by telephone whenever a malfunction occurs that can be expected to create emissions in excess of any applicable emission limitation or to continue for a period greater than four hours.

5. ARM 17.8.111 Circumvention. (1) No person shall cause or permit the installation or use of any device or any means that, without resulting in reduction of the total amount of air contaminant emitted, conceals or dilutes an emission of air contaminant that would otherwise violate an air pollution control regulation. (2) No equipment that may produce emissions shall be operated or maintained in such a manner as to create a public nuisance.

B. ARM 17.8, Subchapter 2 – Ambient Air Quality, including, but not limited to the following:

1. ARM 17.8.204 Ambient Air Monitoring
2. ARM 17.8.210 Ambient Air Quality Standards for Sulfur Dioxide
3. ARM 17.8.211 Ambient Air Quality Standards for Nitrogen Dioxide
4. ARM 17.8.212 Ambient Air Quality Standards for Carbon Monoxide
5. ARM 17.8.213 Ambient Air Quality Standard for Ozone
6. ARM 17.8.214 Ambient Air Quality Standard for Hydrogen Sulfide
7. ARM 17.8.220 Ambient Air Quality Standard for Settled Particulate Matter
8. ARM 17.8.221 Ambient Air Quality Standard for Visibility
9. ARM 17.8.222 Ambient Air Quality Standard for Lead
10. ARM 17.8.223 Ambient Air Quality Standard for PM_{10}

BCPL must maintain compliance with the applicable ambient air quality standards.

C. ARM 17.8, Subchapter 3 – Emission Standards, including, but not limited to:

1. ARM 17.8.304 Visible Air Contaminants. This rule requires that no person may cause or authorize emissions to be discharged into the outdoor atmosphere from any source installed after November 23, 1968, that exhibit an opacity of 20% or greater averaged over six consecutive minutes.

2. ARM 17.8.308 Particulate Matter, Airborne. (1) This rule requires an opacity limitation of less than 20% for all fugitive emission sources and that reasonable precautions be taken to control emissions of airborne particulate matter. (2) Under this rule, BCPL shall not cause or authorize the use of any street, road, or parking lot without taking reasonable precautions to control emissions of airborne particulate matter.

3. ARM 17.8.309 Particulate Matter, Fuel Burning Equipment. This rule requires that no person shall cause, allow, or permit to be discharged into the atmosphere particulate matter caused by the combustion of fuel in excess of the amount determined by this rule.

4. ARM 17.8.310 Particulate Matter, Industrial Process. This rule requires that no person shall cause, allow, or permit to be discharged into the atmosphere particulate matter in excess of the amount set forth in this rule.

5. ARM 17.8.322 Sulfur Oxide Emissions--Sulfur in Fuel. (4) Commencing July 1, 1972, no person shall burn liquid or solid fuels containing sulfur in excess of 1 pound of sulfur per million Btu fired. (5) Commencing July 1, 1971, no person shall burn any gaseous fuel containing sulfur compounds in excess of 50 grains per 100 cubic feet of gaseous fuel, calculated as hydrogen sulfide at standard conditions. BCPL will burn natural gas in the compressor engines, which will meet this limitation.

6. ARM 17.8.324 Hydrocarbon Emissions--Petroleum Products. (3) No person shall load or permit the loading of gasoline into any stationary tank with a capacity of 250 gallons or more from any tank truck or trailer, except through a permanent submerged fill pipe, unless such tank is equipped with a vapor loss control device as described in (1) of this rule.

7. ARM 17.8.340 Standard of Performance for New Stationary Sources and Emission Guidelines for Existing Sources. This rule incorporates, by reference, 40 CFR 60, Standards of Performance for New Stationary Sources (NSPS). This facility is not an NSPS affected source because it does not meet the definition of any NSPS subpart defined in 40 CFR 60.

   The Decker 17 Battery is not an NSPS affected source because it does not meet the definition of a natural gas processing plant defined in 40 CFR 60, Subpart KKK. In addition, 40 CFR 60, Subpart LLL is not applicable to the Decker 17 Battery because the facility does not utilize a sweetening unit to process sour gas.

8. ARM 17.8.342 Emission Standards for Hazardous Air Pollutants for Source Categories. A major source of Hazardous Air Pollutants (HAPs), as defined and applied in 40 CFR 63, shall comply with the requirements of 40 CFR 63, as applicable, including the following subparts:

   - 40 CFR 63, Subpart HH - National Emission Standards for Hazardous Air Pollutants From Oil and Natural Gas Production Facilities
   - 40 CFR 63, Subpart HHH National Emission Standards for Hazardous Air Pollutants From Natural Gas Transmission and Storage Facilities
   - 40 CFR 63, Subpart ZZZZ National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines

   Based on the information submitted by BCPL in the application for Permit #4066-00, the facility is not subject to the provisions of 40 CFR Part 63, because the facility is not a major source of HAPs.

D. ARM 17.8, Subchapter 4 – Stack Height and Dispersion Techniques, including, but not limited to:

1. ARM 17.8.401 Definitions. This rule includes a list of definitions used in this chapter, unless indicated otherwise in a specific subchapter.

2. ARM 17.8.402 Requirements. BCPL must demonstrate compliance with the ambient air quality standards with a stack height that does not exceed Good Engineering Practices (GEP). The proposed height of the new or altered stacks for BCPL are below the allowable 65-meter GEP stack height.

E. ARM 17.8, Subchapter 5 – Air Quality Permit Application, Operation, and Open Burning Fees, including, but not limited to:

1. ARM 17.8.504 Air Quality Permit Application Fees. This rule requires that an applicant submit an air quality permit application fee concurrent with the submittal of an air quality permit application. A permit application is incomplete until the proper application fee is paid to the Department. BCPL submitted the appropriate permit application fee for the current permit action.

2. ARM 17.8.505 Air Quality Operation Fees. An annual air quality operation fee must, as a condition of continued operation, be submitted to the Department by each source of air contaminants holding an air quality permit (excluding an open burning permit) issued by the Department. The air quality operation fee is based on the actual or estimated actual amount of air pollutants emitted during the previous calendar year.

   An air quality operation fee is separate and distinct from an air quality permit application fee. The annual assessment and collection of the air quality operation fee, described above, shall take place on a calendar-year basis. The Department may insert into any final permit issued after the effective date of these rules, such conditions as may be necessary to require the payment of an air quality operation fee on a calendar-year basis, including provisions that prorate the required fee amount.

F. ARM 17.8, Subchapter 7 – Permit, Construction, and Operation of Air Contaminant Sources, including, but not limited to:

1. ARM 17.8.740 Definitions. This rule is a list of applicable definitions used in this chapter, unless indicated otherwise in a specific subchapter.

2. ARM 17.8.743 Montana Air Quality Permits--When Required. This rule requires a person to obtain an air quality permit or permit alteration to construct, alter, or use any air contaminant sources that have the potential to emit (PTE) greater than 25 tons per year of any pollutant. BCPL has a PTE greater than 25 tons per year of oxides of nitrogen (NO_x) and carbon monoxide (CO); therefore, an air quality permit is required.

3. ARM 17.8.744 Montana Air Quality Permits--General Exclusions. This rule identifies the activities that are not subject to the Montana Air Quality Permit program.

4. ARM 17.8.745 Montana Air Quality Permits--Exclusion for De Minimis Changes. This rule identifies the de minimis changes at permitted facilities that do not require a permit under the Montana Air Quality Permit Program.

5. ARM 17.8.748 New or Modified Emitting Units--Permit Application Requirements. (1) This rule requires that a permit application be submitted prior to installation, alteration, or use of a source. BCPL submitted the required permit application for the current permit action. (7) This rule requires that the applicant notify the public by means of legal publication in a newspaper of general circulation in the area affected by the application for a permit. BCPL submitted an affidavit of publication of public notice for the March 11, 2007, issue of *The Billings Gazette*, a newspaper of general circulation in the Town of Billings in Yellowstone County, as proof of compliance with the public notice requirements.

6. ARM 17.8.749 Conditions for Issuance or Denial of Permit. This rule requires that the permits issued by the Department must authorize the construction and operation of the facility or emitting unit subject to the conditions in the permit and the requirements of this subchapter. This rule also requires that the permit must contain any conditions necessary to assure compliance with the Federal Clean Air Act (FCAA), the Clean Air Act of Montana, and rules adopted under those acts.

7. ARM 17.8.752 Emission Control Requirements. This rule requires a source to install the maximum air pollution control capability that is technically practicable and economically feasible, except that BACT shall be utilized. The required BACT analysis/determination is included in Section III of this permit analysis.

8. ARM 17.8.755 Inspection of Permit. This rule requires that air quality permits shall be made available for inspection by the Department at the location of the source.

9. ARM 17.8.756 Compliance with Other Requirements. This rule states that nothing in the permit shall be construed as relieving BCPL of the responsibility for complying with any applicable federal or Montana statute, rule, or standard, except as specifically provided in ARM 17.8.740, *et seq*.

10. ARM 17.8.759 Review of Permit Applications. This rule describes the Department's responsibilities for processing permit applications and making permit decisions on those permit applications that do not require the preparation of an environmental impact statement.

11. ARM 17.8.762 Duration of Permit. An air quality permit shall be valid until revoked or modified, as provided in this subchapter, except that a permit issued prior to construction of a new or altered source may contain a condition providing that the permit will expire unless construction is commenced within the time specified in the permit, which in no event may be less than 1 year after the permit is issued.

12. ARM 17.8.763 Revocation of Permit. An air quality permit may be revoked upon written request of the permittee, or for violations of any requirement of the Clean Air Act of Montana, rules adopted under the Clean Air Act of Montana, the FCAA, rules adopted under the FCAA, or any applicable requirement contained in the Montana State Implementation Plan (SIP).

13. ARM 17.8.764 Administrative Amendment to Permit. An air quality permit may be amended for changes in any applicable rules and standards adopted by the Board of Environmental Review (Board) or changed conditions of operation at a source or stack that do not result in an increase of emissions as a result of those changed conditions. The owner or operator of a facility may not increase the facility's emissions beyond permit limits unless the increase meets the criteria in ARM 17.8.745 for a de minimis change not requiring a permit, or unless the owner or operator applies for and receives another permit in accordance with ARM 17.8.748, ARM 17.8.749, ARM 17.8.752, ARM 17.8.755, and ARM 17.8.756, and with all applicable requirements in ARM Title 17, Chapter 8, Subchapters 8, 9, and 10.

14. ARM 17.8.765 Transfer of Permit. This rule states that an air quality permit may be transferred from one person to another if written notice of intent to transfer, including the names of the transferor and the transferee, is sent to the Department.

G. ARM 17.8, Subchapter 8 – Prevention of Significant Deterioration of Air Quality, including, but not limited to:

1. ARM 17.8.801 Definitions. This rule is a list of applicable definitions used in this subchapter.

2. ARM 17.8.818 Review of Major Stationary Sources and Major Modifications--Source Applicability and Exemptions. The requirements contained in ARM 17.8.819 through ARM 17.8.827 shall apply to any major stationary source and any major modification, with respect to each pollutant subject to regulation under the FCAA that it would emit, except as this subchapter would otherwise allow.

This facility is not a major stationary source since this facility is not a listed source and the facility's PTE is below 250 tons per year of any pollutant (excluding fugitive emissions).

H. ARM 17.8, Subchapter 12 – Operating Permit Program Applicability, including, but not limited to:

1. ARM 17.8.1201 Definitions. (23) Major Source under Section 7412 of the FCAA is defined as any source having:

   a. PTE greater than 100 tons per year of any pollutant;

   b. PTE greater than 10 tons per year of any one HAP, PTE greater than 25 tons per year of a combination of all HAPs, or a lesser quantity as the Department may establish by rule; or

   c. PTE greater than 70 tons per year of particulate matter with an aerodynamic diameter of ten microns or less (PM_{10}) in a serious PM_{10} nonattainment area.

2. ARM 17.8.1204 Air Quality Operating Permit Program. (1) Title V of the FCAA amendments of 1990 requires that all sources, as defined in ARM 17.8.1204(1), obtain a Title V Operating Permit. In reviewing and issuing Air Quality Permit #4066-00 for BCPL, the following conclusions were made:

   a. The facility's PTE is less than 100 tons per year for any pollutant.

   b. The facility's PTE is less than 10 tons per year for any one HAP and less than 25 tons per year for all HAPs.

   c. This source is not located in a serious PM_{10} nonattainment area.

   d. This facility is not subject to any current NSPS.

   e. This facility is not subject to any current NESHAP standards.

   f. This source is not a Title IV affected source, nor a solid waste combustion unit.

   g. This source is not an EPA designated Title V source.

   Based on these facts, the Department determined that BCPL is a minor source of emissions as defined under Title V.

III. BACT Determination

A BACT determination is required for each new or altered source. BCPL shall install on the new or altered source the maximum air pollution control capability that is technically practicable and economically feasible, except that BACT shall be utilized.

A BACT analysis was submitted by BCPL in Permit Application #4066-00, addressing some available methods of controlling emissions from natural gas compressor engines. The Department reviewed these methods, as well as previous BACT determinations in order to make the following BACT determination(s).

Compressor Engine BACT

A. NO_x BACT

As part of the NO_X BACT analyses, the following control technologies were reviewed:

- Lean-burn engine with a selective catalytic reduction (SCR) unit and an air-to-fuel ratio (AFR) controller
- Lean-burn engine with an SCR unit
- Lean-burn engine with an AFR controller
- Lean-burn engine with a non-selective catalytic reduction (NSCR) unit and AFR controller
- Lean-burn engine with an NSCR unit
- Lean-burn engine with no additional controls
- Rich-burn engine with an NSCR unit and an AFR controller
- Rich-burn engine with an NSCR unit
- Rich-burn engine with an AFR controller
- Rich-burn engine with an SCR and an AFR controller
- Rich-burn engine with an SCR
- Rich-burn engine with no additional controls

SCR applied to rich-burn engines is technically infeasible because the oxygen concentration from rich-burn engines is not high enough for an SCR unit to operate properly. NSCR on lean-burn engines is technically infeasible because the engine must burn a rich fuel mixture for the NSCR to properly operate. Adverse environmental impacts could occur with an SCR unit operating on lean-burn engines at variable loads as required by a typical compressor engine. SCR units are typically installed on process units that have a constant or low variability in load fluctuation. When engine load changes excess ammonia (ammonia slip) may pass through the system and out the stack or not enough ammonia will be injected. SCR units are technically infeasible because of the potential adverse environmental impacts from the typical load fluctuations that are required for compressor engines. SCR units have not been installed on lean-burn compressor engines in Montana. AFR controllers for 400-bhp range engines (the lean-burn Waukesha F18 GL and Caterpillar G3508LE) are not currently available.

The following tables list the technically feasible control options in order of the highest control efficiency to the lowest control efficiency:

400-bhp Range Engines

Control Technology	% Control	NO_X Emission Rate (g/bhp-hr)
Lean-Burn without Control	92.5	1.5
Rich-Burn engine with NSCR	95.0	1.0
Rich-Burn without Control	--	20.0

600 to 800-bhp Range Engines

Control Technology	% Control	NO_X Emission Rate (g/bhp-hr)
Lean-Burn without Control or with AFR only	95.0	2.0
Rich-Burn engine with NSCR and AFR or NSCR only	95.0	1.0
Rich-Burn without Control or with only AFR	--	20.0

The control methods listed above are widely used and cannot be eliminated solely based on environmental or energy impacts. Lean-burn engines do emit relatively higher HAP (formaldehyde (HCHO)) emissions than rich-burn engines. Lean-burn engines cannot be eliminated based on higher formaldehyde emissions, but the higher formaldehyde emissions can affect the BACT determination. The 600 to 800-bhp range engines without AFR control are removed from the analysis because AFR control would be required and is consistent with other recently permitted similar sources.

The tables below show the cost per ton of NO_X reduction (cost effectiveness) achieved for the remaining control options.

400-bhp Range Engine Cost Effectiveness

Control Technology	Total Annual Cost ($)	Resulting NO_X Emissions (tpy)	Cost Effectiveness ($/ton)
Baseline Emissions			
Lean-Burn Engine without Control	--	7.7	
Rich-Burn Engine without Control or with only AFR	--	77.3	--
Controlled Emissions			
Lean-burn engine without control	0	7.7	0
Rich-Burn Engine with NSCR	20,000	3.9	273

$273 = 20,000 / (77.3-3.9)
$0 = 0 / (7.7-7.7)

600 to 800-bhp Range Engine Cost Effectiveness

Control Technology	Total Annual Cost ($)	Resulting NO_X Emissions (tpy)	Cost Effectiveness ($/ton)
Baseline Emissions			
Lean-Burn Engine without Control (633-bhp)	--	12.2	--
Lean-Burn Engine without Control (840-bhp)	--	16.6	--
Rich-Burn Engine without Control and with AFR (860-bhp)	--	166.1	--
Controlled Emissions			
Lean-Burn Engine without Control or with AFR (633-bhp)	--	12.2	0
Rich-Burn Engine with NSCR and with AFR (840-bhp)	25,000	8.1	158
Lean-Burn Engine without Control or with AFR (860-bhp)	--	16.6	0

$0 = 0 / (12.2-12.2)
$158 = 25,000 / (166.1-8.1)
$0 = 0 / (16.6-16.6)

The use of a lean-burn engine without control or with AFR only is the most cost-effective method to control NO_X emissions from 400-bhp range engines. Typically, the Department considers a lb/hr emission limit based on 1.0 g/bhp-hr to be BACT for NO_x emissions from natural gas compressor engines. However, BCPL submitted information demonstrating that it is technically infeasible for a Waukesha F18 GL compressor engine to continually meet a lb/hr emission limit based on 1.0 g/bhp-hr. Therefore, the Department determined that the emission limit of 1.32 lb/hr, which corresponds to an emission factor of 1.5 g/bhp-hr using a lean-burn engine without control or with an AFR only for control of NO_X emissions is BACT for 400-bhp range engines. However, because a rich-burn engine with NSCR and AFR or NSCR only would have equal or lower emissions and because the cost effectiveness of using NSCR or NSCR/AFR would still be economically reasonable, the Department determined that the emission limit of 0.88 lb/hr, which corresponds to an emission factor of 1.0 g/bhp-hr using a rich-burn engine with NSCR/AFR is also BACT. Lean-burn engines equipped with no additional control or with an AFR only and rich-burn engines equipped with NSCR/AFR are frequently used in the natural gas compression industry and the BACT determination is consistent with other recently permitted similar sources.

The use of the lean-burn engine without control or with AFR only is the most cost-effective method to control NO_X emissions from 600-800-bhp range engines. Typically, the Department considers a lb/hr emission limit based on 1.0 g/bhp-hr to be BACT for NO_x emissions from natural gas compressor engines. However, under the current permit action, BCPL proposed the use of two lean-burn engines that cannot meet a lb/hr emission limit based on 1.0 g/bhp-hr. BCPL submitted an incremental cost effectiveness analysis to demonstrate that requiring BCPL to use comparable engines that may meet a lb/hr emission limit equivalent to 1.0 g/bhp-hr would be cost prohibitive.

The table below shows the incremental cost effectiveness of requiring engines other than the proposed engines.

600 to 800-bhp Range Incremental Cost Effectiveness

Control Technology	Emission Limit (g/bhp-hr)	Incremental Annual Fuel and Maintenance Cost ($)	Resulting NO_X Emissions (tpy)	Incremental Cost Effectiveness ($/ton)
Caterpillar 3412LE 637-bhp lean-burn	1.0	32,683	6.15	--
Caterpillar G3508LE 633-bhp lean-burn	2.0	0	0	--
Incremental Cost		**32,683**	**6.15**	**5,314**
Waukesha 3524GSI 840-bhp rich-burn	1.0	14,930	4.05	--
Caterpillar G3512LE 860-bhp lean-burn	1.5	0	0	--
Incremental Cost		**14,930**	**4.05**	**3,686**

5,314 = 32,683 / 6.15
3,686 = 14,930 / 4.05

A 637-bhp Caterpillar 3412LE lean-burn engine would cost an additional $5,314 per additional ton of NO_X removed beyond the 633-bhp Caterpillar G3508LE. The Department determined that the emission limit of 2.79 lb/hr, which corresponds to an emission factor of 2.0 g/bhp-hr is BACT for control of NO_X emissions while using a Caterpillar G3508LE 633-bhp lean-burn engine. An 840-bhp Caterpillar G3512LE lean-burn engine would cost an additional $3,686 per additional ton of NO_X removed beyond the 860-bhp Caterpillar 3512LE lean-burn engine. The

Department determined that using AFR to meet an emission limit of 2.84 lb/hr, which corresponds to an emission factor of 1.5 g/bhp-hr is BACT for control of NO_x emissions while using a Caterpillar G3512LE 860-bhp lean-burn engine.

However, because a rich-burn engine with NSCR and AFR or NSCR only would have equal or lower emissions and because the cost effectiveness of using NSCR or NSCR/AFR would still be economically reasonable, the Department determined that the emission limit of 1.85 lb/hr, which corresponds to an emission factor of 1.0 g/bhp-hr using a rich-burn engine with NSCR/AFR is also BACT. Lean-burn engines equipped with no additional control or with an AFR only and rich-burn engines equipped with NSCR/AFR are frequently used in the natural gas compression industry and the BACT determination is consistent with other recently permitted similar sources.

B. CO BACT

As part of the CO BACT analyses, the following control technologies were reviewed:

- Lean-burn engine with a catalytic oxidation unit and an AFR controller
- Lean-burn engine with a catalytic oxidation unit
- Lean-burn engine with an AFR controller
- Lean-burn engine with an NSCR unit and AFR controller
- Lean-burn engine with an NSCR unit
- Lean-burn engine with no additional controls
- Rich-burn engine with an NSCR unit and an AFR controller
- Rich-burn engine with an NSCR unit
- Rich-burn engine with an AFR controller
- Rich-burn engine with a catalytic oxidation unit and an AFR controller
- Rich-burn engine with a catalytic oxidation unit
- Rich-burn engine with no additional controls

Catalytic oxidation applied to a rich-burn engine is technically infeasible because the oxygen concentration from a rich-burn engine is not high enough for a catalytic oxidizer to operate properly. An NSCR unit applied to a lean-burn engine is also technically infeasible because the NSCR unit needs a rich fuel-to-air ratio to operate effectively. AFR controllers for the lean-burn Waukesha F18GL and Caterpillar G3508LE engines are not currently available.

The following tables list the technically feasible control options in order of the highest control efficiency to the lowest control efficiency:

400-bhp Range Engines

Control Technology	% Control	CO Emission Rate (g/bhp-hr)
Lean-Burn with Catalytic Oxidizer	97.5	0.5
Rich-Burn with NSCR and AFR or NSCR only	90.0	2.0
Lean-Burn without Control	85.0	3.0
Rich-Burn without Control or with only AFR	--	20.0

600 to 800-bhp Range Engines

Control Technology	% Control	CO Emission Rate (g/bhp-hr)
Lean-Burn with Catalytic Oxidizer and/or AFR	97.5	0.5
Rich -Burn with NSCR and/or AFR	90.0	2.0
Lean-Burn without Control or with only AFR	85.0	3.0
Rich-Burn without Control or with only AFR	--	20.0

The control methods listed above are widely used and cannot be eliminated solely based on environmental or energy impacts. Lean-burn engines do emit relatively higher HAP (formaldehyde) emissions than rich-burn engines. However, lean-burn engines cannot be eliminated based on higher formaldehyde emissions, but the higher formaldehyde emissions can affect the BACT determination. 600 to 800-bhp range engines without AFR control are removed from the analysis because AFR control would be required and is consistent with other recently permitted similar sources.

The following tables show the cost per ton of CO reduction (cost effectiveness) achieved for the various control options.

400-bhp Range Engine Cost Effectiveness

Control Technology	Total Annual Cost ($)	Resulting NO_X Emissions (tpy)	Cost Effectiveness ($/ton)
Baseline Emissions			
Lean-burn Engine without control	0	11.6	0
Rich-Burn Engine without Control or with only AFR	--	77.3	--
Controlled Emissions			
Lean-burn Engine with Oxidation Catalyst	10,000	1.9	1,031
Rich-burn Engine with NSCR/AFR or NSCR only	20,000	7.7	287

$1,031 = 10,000 / (11.6-1.9)
$287 = 20,000 / (77.3-7.7)

600 to 800-bhp Range Engine Cost Effectiveness

Control Technology	Total Annual Cost ($)	Resulting NO_X Emissions (tpy)	Cost Effectiveness ($/ton)
Baseline Emissions			
Lean Burn Engine without controls or with AFR only (633-bhp)	--	18.3	--
Rich-Burn Engine without Control or with AFR (840-bhp)		162.3	
Lean Burn Engine without controls or with AFR only (860-bhp)	--	24.9	--
Controlled Emissions			
Lean-burn Engine with Oxidation Catalyst and with AFR (633-bhp)	12,000	3.1	789
Rich-burn Engine with NSCR and with AFR (840-bhp)	25,000	16.2	171
Lean-burn Engine with Oxidation Catalyst and with AFR (860-bhp)	25,000	4.2	1,208

789 = 12,000 / (18.3-3.1)
171 = 25,000 / (162.3-16.2)
1,208 = 25,000 / (24.9-4.2)

The use of the rich-burn engine with an NSCR unit and AFR controller is the most cost-effective method to control CO emissions. The Department determined that an 840-bhp rich-burn engine with an NSCR unit and AFR controller, with an emission limit of 3.70 lb/hr, which corresponds to an emission factor of 2.0 g/bhp-hr is BACT. A rich-burn engine equipped with an NSCR unit

and an AFR controller is frequently used in the natural gas compression industry and the BACT determination is consistent with other recently permitted similar sources. Because a lean-burn engine equipped with an oxidation catalyst provides environmental benefits that are equal to or exceed that of the rich-burn engines equipped with NSCR and AFR the Department determined that they can be utilized in place of the rich-burn engines. The Department determined that an 860-bhp lean-burn engine with an oxidation catalyst, with an emission limit of 0.95 lb/hr, which corresponds to an emission factor of 0.50 g/bhp-hr, is also BACT. Further, the Department determined that a 633-bhp lean-burn engine with an oxidation catalyst, with an emission limit of 0.70 lb/hr, which corresponds to an emission factor of 0.50 g/bhp-hr, is also BACT. Lean-burn engines equipped with an oxidation catalyst and AFR or only an oxidation catalyst and rich-burn engines equipped with NSCR/AFR or NSCR only are frequently used in the natural gas compression industry and the BACT determination is consistent with other recently permitted similar sources.

C. VOC BACT

Because BCPL proposed no additional controls to meet lb/hr emission limits equivalent to 1.0 gr/bhp-hr for all the proposed engines and because no additional controls to meet lb/hr emission limits equivalent to 1.0 gr/bhp-hr have been determined to be BACT for other recently permitted similar sources, the Department determined that no additional controls to meet a lb/hr emission limit equivalent to 1.0 g/bhp-hr constitutes BACT for all the proposed compressor engines.

D. PM_{10} and Sulfur Dioxide (SO_2) BACT

The Department is not aware of any BACT determinations that have required controls for PM_{10} or SO_2 emissions from natural gas fired compressor engines. BCPL proposed no additional controls and burning pipeline-quality natural gas as BACT for PM_{10} and SO_2 emissions from the proposed compressor engines. Due to the relatively small amount of PM_{10} and SO_2 emissions from the proposed engines and the cost of adding additional control, any add-on controls would be cost prohibitive. Therefore, the Department concurred with BCPL's BACT proposal and determined that no additional controls and burning pipeline-quality natural gas constitutes BACT for PM_{10} and SO_2 emissions from the proposed compressor engines.

IV. Emission Inventory

Engine - PTE

	Tons/year					
Source	**PM_{10}**	**NO_X**	**VOC**	**CO**	**SO_X**	**HCHO**
400-bhp Caterpillar G3408 TA	0.13	3.86	3.86	7.73	0.01	0.23
400-bhp Waukesha F18 GL	0.00	5.79	3.86	1.93	0.01	0.19
633-bhp Caterpillar G3508LE	0.00	12.23	6.11	3.06	0.01	0.43
840-bhp Waukesha 3524 GSI	0.27	8.11	8.11	16.23	0.02	0.41
860-bhp Caterpillar 3512LE	0.00	12.46	8.31	4.15	0.02	0.58

Facility Worst Case Engine Scenario - PTE

	Tons/year					
Source	****PM_{10}**	***NO_X**	***VOC**	****CO**	****SO_X**	***HCHO**
840-bhp Waukesha 3524 GSI	0.27	8.11	8.11	16.23	0.02	0.41
860-bhp Caterpillar 3512LE	0.00	12.46	8.31	4.15	0.02	0.58
Total	0.54	24.92	16.62	32.46	0.04	1.16

*NOx, VOC, and HCHO worst case totals are based on two 860-bhp Caterpillar 3512LE

**PM_{10}, CO, and SO_x, worst case totals are based on two 840-bhp Waukesha 3524 GSI

400-bhp Caterpillar G3408 TA Compressor Engine

Brake Horsepower: 400 bhp
Hours of operation: 8,760 hr/yr
Fuel Consumption: 3.02 MMBtu/hr (Maximum Design)

PM_{10} Emissions
Emission Factor: 9.50E-03 lb/MMBtu (AP-42, Chapter 3, Table 3.2-3, 7/00)
Calculations: 3.02 MMBtu/hr * 9.50E-03 lb/MMBtu = 0.029 lb/hr
0.029 lb/hr * 8,760 hr/yr * 0.0005 ton/lb = 0.13 ton/yr

NO_X Emissions
Emission factor: 1.00 gram/bhp-hour (BACT Determination)
Calculations: 1.00 gram/bhp-hour * 400 bhp * 0.002205 lbs/gram = 0.882 lb/hr
0.882 lb/hr * 8,760 hr/yr * 0.0005 ton/lb = 3.86 ton/yr

VOC Emissions
Emission factor: 1.00 gram/bhp-hour (BACT Determination)
Calculations: 1.00 gram/bhp-hour * 400 bhp * 0.002205 lb/gram = 0.882 lb/hr
0.882 lb/hr * 8,760 hr/yr * 0.0005 ton/lb = 3.86 ton/yr

CO Emissions
Emission factor: 2.00 gram/bhp-hour (BACT Determination)
Calculations: 2.00 gram/bhp-hour * 400 bhp * 0.002205 lb/gram = 1.76 lb/hr
1.76 lb/hr * 8,760 hr/yr * 0.0005 ton/lb = 7.73 ton/yr

SO_2 Emissions
Emission factor: 5.88E-04 lb/MMBtu (AP-42, Chapter 3, Table 3.2-3, 7/00)
Calculations: 3.01 MMBtu/hr * 5.88E-04 lb/MMBtu = 0.002 lb/hr
0.002 lb/hr * 8,760 hr/yr * 0.0005 ton/lb = 0.01 ton/yr

HCHO Emissions
Emission factor: 0.06 gram/bhp-hour (Manufacturer's Information)
Calculations: 0.06 gram/bhp-hour * 400 bhp * 0.002205 lb/gram = 0.05 lb/hr
0.05 lb/hr * 8,760 hr/yr * 0.0005 ton/lb = 0.23 ton/yr

400-bhp Waukesha F18 GL Compressor Engine

Brake Horsepower: 400 bhp
Hours of operation: 8,760 hr/yr
Fuel Consumption: 2.86 MMBtu/hr (Maximum Design)

PM_{10} Emissions
Emission Factor: 7.71E-05 lb/MMBtu (AP-42, Chapter 3, Table 3.2-2, 7/00)
Calculations: 2.86 MMBtu/hr * 7.71E-05 lb/MMBtu = 0.00 lb/hr
0.00 lb/hr * 8,760 hr/yr * 0.0005 ton/lb = 0.001 ton/yr

NO_X Emissions
Emission factor: 1.50 gram/bhp-hour (BACT Determination)
Calculations: 1.50 gram/bhp-hour * 400 bhp * 0.002205 lbs/gram = 1.32 lb/hr
1.32 lb/hr * 8,760 hr/yr * 0.0005 ton/lb = 5.79 ton/yr

VOC Emissions
Emission factor: 1.00 gram/bhp-hour (BACT Determination)
Calculations: 1.00 gram/bhp-hour * 400 bhp * 0.002205 lb/gram = 0.44 lb/hr
0.44 lb/hr * 8,760 hr/yr * 0.0005 ton/lb = 1.93 ton/yr

CO Emissions
Emission factor: 0.50 gram/bhp-hour (BACT Determination)
Calculations: 0.50 gram/bhp-hour * 400 bhp * 0.002205 lb/gram = 0.44 lb/hr
0.44 lb/hr * 8,760 hr/yr * 0.0005 ton/lb = 1.93 ton/yr

SO_2 Emission
Emission factor: 5.88E-04 lb/MMBtu (AP-42, Chapter 3, Table 3.2-2, 7/00)
Calculations: 2.86 MMBtu/hr * 5.88E-04 lb/MMBtu = 0.00 lb/hr
0.00 lb/hr * 8,760 hr/yr * 0.0005 ton/lb = 0.01 ton/yr

HCHO Emissions
Emission factor: 0.05 gram/bhp-hour (Manufacturer's Information)
Calculations: 0.05 gram/bhp-hour * 400 bhp * 0.002205 lb/gram = 0.04 lb/hr
0.04 lb/hr * 8,760 hr/yr * 0.0005 ton/lb = 0.19 ton/yr

633-bhp Caterpillar G3508LE Compressor Engine

Brake Horsepower: 633 bhp
Hours of operation: 8,760 hr/yr
Fuel Consumption: 4.83 MMBtu/hr (Maximum Design)

PM_{10} Emissions
Emission Factor: 7.71E-05 lb/MMBtu (AP-42, Chapter 3, Table 3.2-2, 7/00)
Calculations: 4.83 MMBtu/hr * 7.71E-05 lb/MMBtu = 0.0004 lb/hr
0.0004 lb/hr * 8,760 hr/yr * 0.0005 ton/lb = 0.002 ton/yr

NO_X Emissions
Emission factor: 2.00 gram/bhp-hour (BACT Determination)
Calculations: 2.00 gram/bhp-hour * 633 bhp * 0.002205 lbs/gram = 2.79 lb/hr
2.79 lb/hr * 8,760 hr/yr * 0.0005 ton/lb = 12.23 ton/yr

VOC Emissions
Emission factor: 1.00 gram/bhp-hour (BACT Determination)
Calculations: 1.00 gram/bhp-hour * 633 bhp * 0.002205 lb/gram = 1.40 lb/hr
1.40 lb/hr * 8,760 hr/yr * 0.0005 ton/lb = 6.11 ton/yr

CO Emissions
Emission factor: 0.50 gram/bhp-hour (BACT Determination)
Calculations: 0.50 gram/bhp-hour * 633 bhp * 0.002205 lb/gram = 0.70 lb/hr
0.70 lb/hr * 8,760 hr/yr * 0.0005 ton/lb = 3.06 ton/yr

SO_2 Emission
Emission factor: 5.88E-04 lb/MMBtu (AP-42, Chapter 3, Table 3.2-2, 7/00)
Calculations: 4.83 MMBtu/hr * 5.88E-04 lb/MMBtu = 0.003 lb/hr
0.00 lb/hr * 8,760 hr/yr * 0.0005 ton/lb = 0.01 ton/yr

HCHO Emissions
Emission factor: 0.07 gram/bhp-hour (Manufacturer's Information)
Calculations: 0.07 gram/bhp-hour * 633 bhp * 0.002205 lb/gram = 0.10 lb/hr
0.10 lb/hr * 8,760 hr/yr * 0.0005 ton/lb = 0.43 ton/yr

840-bhp Waukesha 3524GSI Compressor Engine

Brake Horsepower: 840 bhp
Hours of operation: 8,760 hr/yr
Fuel Consumption: 6.57 MMBtu/hr (Maximum Design)

PM_{10} Emissions
Emission Factor: 9.50E-03 lb/MMBtu (AP-42, Chapter 3, Table 3.2-3, 7/00)
Calculations: 6.57 MMBtu/hr * 9.50E-03 lb/MMBtu = 0.06 lb/hr
0.06 lb/hr * 8,760 hr/yr * 0.0005 ton/lb = 0.27 ton/yr

NO_X Emissions
Emission factor: 1.00 gram/bhp-hour (BACT Determination)
Calculations: 1.00 gram/bhp-hour * 840 bhp * 0.002205 lbs/gram = 1.85 lb/hr
1.85 lb/hr * 8,760 hr/yr * 0.0005 ton/lb = 8.11 ton/yr

VOC Emissions
Emission factor: 1.00 gram/bhp-hour (BACT Determination)
Calculations: 1.00 gram/bhp-hour * 840 bhp * 0.002205 lb/gram = 1.85 lb/hr
1.85 lb/hr * 8,760 hr/yr * 0.0005 ton/lb = 8.11 ton/yr

CO Emissions
Emission factor: 2.00 gram/bhp-hour (BACT Determination)
Calculations: 2.00 gram/bhp-hour * 840 bhp * 0.002205 lb/gram = 3.70 lb/hr
3.70 lb/hr * 8,760 hr/yr * 0.0005 ton/lb = 16.23 ton/yr

SO_2 Emission
Emission factor: 5.88E-04 lb/MMBtu (AP-42, Chapter 3, Table 3.2-3, 7/00)
Calculations: 6.57 MMBtu/hr * 5.88E-04 lb/MMBtu = 0.004 lb/hr
0.004 lb/hr * 8,760 hr/yr * 0.0005 ton/lb = 0.02 ton/yr

HCHO Emissions
Emission factor: 0.05 gram/bhp-hour (Manufacturer's Information)
Calculations: 0.05 gram/bhp-hour * 840 bhp * 0.002205 lb/gram = 0.09 lb/hr
0.09 lb/hr * 8,760 hr/yr * 0.0005 ton/lb = 0.41 ton/yr

860-bhp Caterpillar G3512LE Compressor Engine

Brake Horsepower: 860 bhp
Hours of operation: 8,760 hr/yr
Fuel Consumption: 6.42 MMBtu/hr (Maximum Design)

PM_{10} Emissions
Emission Factor: 7.71E-05 lb/MMBtu (AP-42, Chapter 3, Table 3.2-2, 7/00)
Calculations: 6.42 MMBtu/hr * 7.71E-05 lb/MMBtu = 0.0005 lb/hr
0.0005 lb/hr * 8,760 hr/yr * 0.0005 ton/lb = 0.002 ton/yr

NO_X Emissions
Emission factor: 1.50 gram/bhp-hour (BACT Determination)
Calculations: 1.50 gram/bhp-hour * 860 bhp * 0.002205 lbs/gram = 2.84 lb/hr
2.84 lb/hr * 8,760 hr/yr * 0.0005 ton/lb = 12.46 ton/yr
VOC Emissions
Emission factor: 1.00 gram/bhp-hour (BACT Determination)
Calculations: 1.00 gram/bhp-hour * 860 bhp * 0.002205 lb/gram = 1.90 lb/hr
1.90 lb/hr * 8,760 hr/yr * 0.0005 ton/lb = 8.31 ton/yr

CO Emissions
Emission factor: 0.50 gram/bhp-hour (BACT Determination)
Calculations: 0.50 gram/bhp-hour * 860 bhp * 0.002205 lb/gram = 0.95 lb/hr
0.95 lb/hr * 8,760 hr/yr * 0.0005 ton/lb = 4.15 ton/yr
SO_2 Emission
Emission factor: 5.88E-04 lb/MMBtu (AP-42, Chapter 3, Table 3.2-2, 7/00)
Calculations: 6.42 MMBtu/hr * 5.88E-04 lb/MMBtu = 0.004 lb/hr
0.004 lb/hr * 8,760 hr/yr * 0.0005 ton/lb = 0.02 ton/yr

HCHO Emissions
Emission factor: 0.07 gram/bhp-hour (Manufacturer's Information)
Calculations: 0.07 gram/bhp-hour * 860 bhp * 0.002205 lb/gram = 0.13 lb/hr
0.13 lb/hr * 8,760 hr/yr * 0.0005 ton/lb = 0.58 ton/yr

V. Existing Air Quality

The facility is located approximately 11 kilometers northeast of Decker, Montana, in the NW ¼ of Section 17, Township 9 South, Range 41 East, in Big Horn County, Montana. The air quality of this area is classified as either better than National Standards or unclassifiable/attainment for the National Ambient Air Quality Standards (NAAQS) for criteria pollutants.

VI. Ambient Air Impact Analysis

The Department determined, based on ambient air quality modeling, that the impact from this permitting action will be minor. The Department believes it will not cause or contribute to a violation of any ambient air quality standard.

Aspen Consulting & Engineering (Aspen) conducted air quality modeling for the proposed BCPL Decker #17 Battery as part of the BCPL air quality permit application. The modeling was done for NO_x and CO to demonstrate compliance with the Montana Ambient Air Quality Standards (MAAQS) and the NAAQS. In addition, although a New Source Review (NSR) - Prevention of Significant Deterioration (PSD) increment analysis was not required for this permitting action, the Department requested that permittees of coal bed methane natural gas compressor stations model for PSD increments for NO_x; therefore, a PSD increment analysis was conducted.

EPA's AERMOD model was used with one year of on-site meteorological data from the Spring Creek Mine meteorological station, located 8 kilometers (km) east of the site. Spring Creek Mine met data from 2001 was used in AERMET as on-site data. Sheridan, Wyoming NWS data was input as surface data and used to substitute missing data elements from the on-site data. Upper air data from the Glasgow NWS station was also used in AERMET. Modeled receptor elevations were derived from digital elevation model (DEM) files of the United States Geological Survey (USGS) 7.5-minute series (1:24,000 scale) topographical maps. Aspen has provided the DEM files used in AERMAP to establish receptor elevations and hill heights.

The modeling receptor grid complies with the Department's modeling guidance. Receptors were placed along the fence line at no more than 50-meter (m) intervals. A Cartesian receptor grid of 2747 receptors was developed outside the fence line boundary. Receptors were placed at 100-m spacing for a distance of 1 km from the fence line. For a distance of 1 km to 3 km from the fence line, receptors were located at 250-m spacing. From distances of 3 km to 10 km from the source, receptors were placed at 500-m intervals. Twenty-nine receptors were placed around the southeastern boundary of the Northern Cheyenne Indian Reservation (NCIR) at approximately 1500-m spacing to determine Class I impacts. All receptor locations were expressed using the Universal Transverse Mercator (UTM) coordinates, Zone 13.

Downwash effects were modeled using EPA's BPIP-Prime algorithm within the AERMOD model. The permit application and model input files documented the expected building corner coordinates and peak roof heights in a plot plan.

Modeling was conducted for both CO and NO_x emissions from the Decker#17 Battery. Montana and Wyoming facilities identified within 10 km of the Decker#17 Battery were also included in the model. Table 1 identifies the design concentrations and modeling parameters entered into the model for the Decker#17 Battery. Source parameters and emission rates for the other facilities are documented in the modeling files.

Table 1 shows the air dispersion modeling results for the 1-hour and 8-hour CO concentrations. The modeled concentrations from the Decker#17 Battery and the surrounding sources represent about 12% of the 8-hour ambient standard and less than 8% of the 1-hour standards. The modeling scenario chosen for this application represents the worst case NO_x emissions but not the worst case CO emissions. Modeled CO emissions were only 8.34 tons per year, which is roughly a fourth of the possible total of 32.44 tons per year. Multiplying the CO results by a factor of four would still show impacts less than the modeling significance level and far less than the ambient standards.

Table 1. Ambient Air Dispersion Results for CO

Year	Avg. Period	Modeled Conc. ($\mu g/m^3$)	UTM East (X) (m)	UTM North (Y) (m)	Back-ground Conc. ($\mu g/m^3$)	Ambient Conc. ($\mu g/m^3$)	NAAQS ($\mu g/m^3$)	MAAQS ($\mu g/m^3$)	Modeling Significance
2001	1-HR	173	368000	4991500	1,725	1,898	40,000	26,450	2,000
2001	8-HR	82	363243	4989718	1,150	1,232	10,000	10,000	500

Table 2 shows the air dispersion modeling results for NO_2. The results include the total modeled concentrations for two source groups: All and New. The "All" group consists of all sources including the proposed sources for this application, Montana existing NO_x sources, and Wyoming existing NO_x sources. The "New" group includes only the two worst case engines at the Decker#17 Battery. The Ambient Ratio Method (ARM) and the Ozone Limiting Method (OLM) were used to convert the modeled concentrations to NO_2 for comparison to the NAAQS/MAAQS, as per Department modeling guidance.

Table 2. Ambient Air Dispersion Model Results for NO_2

Avg. Period	Source Group	Modeled Conc. ($\mu g/m^3$)	UTM East (X) (m)	UTM North (Y) (m)	OLM[a] / ARM[b] Adjusted to NO_2 ($\mu g/m^3$)	Back-ground Conc. ($\mu g/m^3$)	Ambient Conc. ($\mu g/m^3$)	NAAQS/ MAAQS ($\mu g/m^3$)	% of NAAQS/ MAAQS
Annual	All	15.9	363304	4989688	11.9	6	18	100/94	18 / 19
Annual	New	15.4	363304	4989688	11.6	6	18	100/94	18 / 19
1-HR[c]	All	515	353500	4981000	239	75	314	----/564	---- / 56
1-HR[c]	New	355	363243	4989718	223	75	298	----/564	---- / 53

a. Modeled 1-hour NOx concentrations were converted to NO_2 using the Ozone Limiting Method (OLM).
b. Modeled annual NOx concentrations were converted to NO_2 using the Ambient Ratio Method (ARM).
c. Peak 1-hour impacts are modeled high-second-high impact.

As shown in Table 3, the peak-modeled annual NO_2 concentration for all of the modeled coal bed methane sources was 11.9 micrograms per cubic meter ($\mu g/m^3$) while the individual contribution from the Decker#17 Battery was 11.6 $\mu g/m^3$. The peak (high-2nd-high) modeled 1-hour NO_2 concentration was 314 $\mu g/m^3$ for all sources and 298 $\mu g/m^3$ for the Decker#17 Battery. The peak annual NO_2 impact for all sources occurred at a receptor on the Decker#17 facility boundary, and was clearly dominated by the Decker #17 sources. The peak (high-2nd-high) modeled 1-hour NO_2 impacts from all the modeled sources occurred at a Wyoming receptor near a facility with 10 engines numbered PDOGK01-PDOGK10. The peak (high-2nd-high) modeled 1-hour NO_2 impacts from the Decker#17 sources occurred at a receptor on the facility boundary.

The Decker#17 Battery was modeled using a "worst case" of 2 large compressors. The permit application requests permission to use up to four compressor engines with a total combined capacity not to exceed 1720 bhp. Dispersing the emissions across a larger number of smaller sources would result in lower impacts, so this analysis is conservative and would be sufficient for other configurations or different engine sizes.

Although a PSD increment analysis was not required for this permitting action, Table 3 shows the results of the Class II increment analysis. While modeling demonstrations for ambient standards typically use permitted allowables to demonstrate compliance with ambient standards, modeling demonstrations for PSD increments use actual emissions. In this case, actual emissions were not available so permitted allowable emissions were entered into the model which provided a worst-case scenario.

Table 3. Class II NO_2 Modeling Results

Year	Avg. Period	Source Group	UTM East (X) (m)	UTM North (Y) (m)	Class II Modeled Conc[a] ($\mu g/m^3$)	Class II Increment ($\mu g/m^3$)	% of Class II Increment
2001	Annual	All	363304	4989688	11.9	25	48
2001	Annual	New	363304	4989688	11.6	25	46

[a.] Modeled annual NOx concentrations were converted to NO_2 using the Ambient Ratio Method (ARM).

The Decker#17 Battery would consume approximately 46% of the Class II increment while the all sources group (proposed Decker#17 Battery, and existing Montana and Wyoming sources) would consume about 48%of the increment in this modeling domain. Since allowable emissions were used instead of actual emissions for this analysis, the results are conservatively high.

The receptors placed along the southeastern NCIR boundary did not encompass the entire southern boundary of the Class I area. The modeled NO_x concentrations at the receptors used were well below the Class I increment as shown in Table 4 and the Class I increment is not at risk in this permitting analysis. The highest modeled annual NO_x impact on the NCIR was 0.0648 $\mu g/m^3$, which is about 2.6% of the Class I NO_x increment.

Table 4. Class I Modeling Results

Year	Avg. Period	Source Group	UTM East (X) (m)	UTM North (Y) (m)	Class I Modeled Conc ($\mu g/m^3$)	Class I Increment ($\mu g/m^3$)	% of Class II Increment
2001	Annual	All	369459	5028415	0.0648[a]	2.5	2.6

[a.] Ambient Ratio Method not applied.

As configured in this permit, the Decker#17 Battery will not cause or contribute to a violation of any ambient air quality standard or PSD increment.

VII. Taking or Damaging Implication Analysis

As required by 2-10-105, MCA, the Department conducted a private property taking and damaging assessment and determined there are no taking or damaging implications.

VIII. Environmental Assessment

An environmental assessment (EA), required by the Montana Environmental Policy Act, was completed for this project. The EA assesses the impacts specific to the proposed BCPL Decker #17 Battery and a copy is attached to this analysis of Permit #4066-00. Further, a programmatic

environmental impact statement (EIS) was prepared for coal bed methane development in Montana, including the Powder River and Billings resource management plan (RMP) areas. The EIS assesses the impacts of coal bed methane development from a broad, wide, planning perspective. A copy of the final environmental impact statement can be obtained on the Department's web site at the following Internet address:

http://www.deq.state.mt.us/CoalBedMethane/finaleis.asp.

DEPARTMENT OF ENVIRONMENTAL QUALITY
Permitting and Compliance Division
Air Resources Management Bureau
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FINAL ENVIRONMENTAL ASSESSMENT (EA)

Issued To: Bitter Creek Pipelines, LLC
Decker #17 Battery
P.O. Box 131
Glendive, Montana 59330

Air Quality Permit Number: 4066-00

Preliminary Determination Issued: April 19, 2007
Department Decision Issued: May 7, 2007
Permit Final: May 23, 2007

1. *Legal Description of Site*: The legal description of the site location would be the NW¼ of Section 17, Township 9 South, Range 41 East, Big Horn County, Montana.

2. *Description of Project*: The project would consist of constructing and operating a coal bed methane natural gas compressor station that would include no more than four natural gas compressor engines at any given time and only 400-bhp Caterpillar G3408 TA, 400-bhp Waukesha F18 GL, 633 bhp Caterpillar G3508LE, 840-bhp Waukesha 3524 GSI, and 860-bhpCaterpillar 3512LE natural gas compressor engines would be allowed. In addition, the maximum-rated design capacity of any engine would not exceed 860-bhp and the combined maximum-rated design capacity of all engines operated at the facility would not exceed 1,720-bhp.

3. *Objectives of Project*: The proposed project would provide business and revenue for BCPL by allowing the company to extract natural gas from the field. Natural gas would be received and compressed for transmission through the pipeline.

4. *Alternatives Considered*: In addition to the proposed action, the Department also considered the "no-action" alternative. The "no-action" alternative would deny issuance of the air quality preconstruction permit to the proposed facility. However, the Department does not consider the "no-action" alternative to be appropriate because BCPL demonstrated compliance with all applicable rules and regulations as required for permit issuance. Therefore, the "no-action" alternative was eliminated from further consideration.

5. *A Listing of Mitigation, Stipulations, and Other Controls*: A list of enforceable conditions, including a BACT analysis, would be included in Permit #4066-00.

6. *Regulatory Effects on Private Property*: The Department considered alternatives to the conditions imposed in this permit as part of the permit development. The Department determined that the permit conditions are reasonably necessary to ensure compliance with applicable requirements and demonstrate compliance with those requirements and do not unduly restrict private property rights.

7. *Coal Bed Methane Programmatic Environmental Impact Statement:* The Bureau of Land Management (BLM), the Department, and the Montana Board of Oil and Gas Conservation (MBOGC) prepared a statewide EIS for coal bed methane development in Montana. The purpose of the EIS is to analyze potential impacts from projected oil and gas activities, particularly from coal bed methane exploration, production, development, and reclamation activities from a broad, wide, planning perspective. The planning area (analysis area) was statewide with emphasis placed on the Powder River and Billings RMP, as well as, Blaine, Gallatin, and Park Counties. The BLM, the Department, and the MBOGC were joint lead agencies responsible for preparing the EIS. The lead agencies consulted with the United States Fish and Wildlife Service (USFWS), the Montana Bureau of Mines and Geology (MBMG), the Montana Department of Fish, Wildlife, and Parks (MFWP), the Montana Department of Natural Resources and Conservation (DNRC), the Montana State Historic Preservation Office (MSHPO), the Crow Tribe of Indians, the Northern Cheyenne Tribe, and the Lower Brule Sioux Tribe while preparing the EIS. The final EIS was issued in January 2003, and is available on the Department's web site at http://www.deq.state.mt.us/CoalBedMethane/finaleis.asp. This EA assesses the impacts specific to the proposed BCPL Decker #17 Compressor Station Facility.

8. 8. The following table summarizes the potential physical and biological effects of the proposed project on the human environment. The "no-action" alternative was discussed previously.

		Major	Moderate	Minor	None	Unknown	Comments Included
A	Terrestrial and Aquatic Life and Habitats			X			Yes
B	Water Quality, Quantity, and Distribution			X			Yes
C	Geology and Soil Quality, Stability and Moisture			X			Yes
D	Vegetation Cover, Quantity, and Quality			X			Yes
E	Aesthetics			X			Yes
F	Air Quality			X			Yes
G	Unique Endangered, Fragile, or Limited Environmental Resources			X			Yes
H	Demands on Environmental Resource of Water, Air and Energy			X			Yes
I	Historical and Archaeological Sites			X			Yes
J	Cumulative and Secondary Impacts			X			Yes

SUMMARY OF COMMENTS ON POTENTIAL PHYSICAL AND BIOLOGICAL EFFECTS: The following comments have been prepared by the Department.

A. Terrestrial and Aquatic life and Habitats

Minor impacts to terrestrial and aquatic life and habitats would be expected from the proposed project because deer, antelope, coyotes, geese, ducks, and other terrestrials would potentially use the area around the facility and because the facility would be a source of air pollutants. The facility would emit air pollutants and corresponding deposition of pollutants would occur (as described in Section 7.F. of this EA); however, due to the relatively small size of the facility, the Department determined that any impacts from deposition would be minor. In addition, minor land disturbance would occur through facility construction activities. Any impacts from

facility construction would be minor due to the relatively small size of the project and the relatively short period of time required for construction. Overall, any impacts to terrestrial and aquatic life and habitats would be minor.

B. Water Quality, Quantity and Distribution

Minor impacts would be expected on water quality, quantity, and distribution from the proposed project because the facility would be a source of air pollutants. The facility would have no direct discharges into surface water. However, minor amounts of water may be required to control fugitive dust emissions from the access roads and the general facility property. In addition, the facility would emit air pollutants and corresponding deposition of pollutants would occur. However, the Department determined that because of the relatively small size of the facility that any impact resulting from the deposition of pollutants on water quality, quantity, and distribution would be minor.

In addition, water quality, quantity, and distribution would not be impacted from constructing the facility because there is no surface water at or relatively close to the site. Furthermore, no direct discharges into surface water would occur and no use of surface water would be expected for facility construction. Therefore, no impacts to water quality, quantity, and distribution would be expected from facility construction. Overall, any impacts to water quality, quantity, and distribution would be minor.

C. Geology and Soil Quality, Stability and Moisture

Minor impacts would occur on the geology and soil quality, stability, and moisture from the proposed project because minor construction would be required to install the compressor engines. In addition, no discharges, other than air emissions, would occur at the facility. Any impacts to the geology and soil quality, stability and moisture from facility construction would be minor due to the relatively small size of the project.

Further, deposition of pollutants would occur (as described in Section 7.F. of this EA); however, the Department determined, based on the relatively small size of the facility, that any impacts resulting from the deposition of pollutants on the soils surrounding the site would be minor. Overall, any impacts to the geology and soil quality, stability, and moisture would be minor.

D. Vegetation Cover, Quantity, and Quality

Minor impacts would occur on vegetation cover, quantity, and quality because minor construction would be required to install the compressor engines. Small buildings would be constructed, but the natural gas pipelines and access road currently exist. Any impacts to the vegetation cover, quantity, and quality from facility construction would be minor due to the relatively small size of the project.

In addition, no discharges, other than air emissions, would occur at the facility. The facility would be a source of air pollutants and corresponding deposition of pollutants would occur (as described in Section 7.F. of this EA). However, the Department determined that any impacts resulting from the deposition of pollutants on the existing vegetation cover, quantity, and quality would be minor. Overall, any impacts to vegetation cover, quantity, and quality from the proposed project would be minor.

E. Aesthetics

Minor impacts would result on the aesthetic values of the area because the facility would be adding a small building to house the engines, but the natural gas pipelines and access road currently exist. However, any visual aesthetic impacts would be minor because the proposed project would be relatively small by industrial standards.

The facility would also create additional noise in the area. However, any auditory aesthetic impacts would be minor because the compressor engines would operate indoors with catalyst emission controls. Emission controls are typically designed to be installed in mufflers to achieve the appropriate temperature for proper operation of the catalyst. Overall, any aesthetic impacts would be minor.

F. Air Quality

The air quality of the area would realize minor impacts from the proposed project because the facility would emit the following air pollutants: PM_{10}; NO_X; CO; VOC, including HAPs; and sulfur oxides (SO_X). Air emissions from the facility would be minimized by limitations and conditions that would be included in Permit #4066-00. Conditions would include, but would not be limited to, BACT emission limits and opacity limitations on the proposed engines and the general facility. In addition, the Department determined, based on ambient air quality modeling (See Section VI of the Permit analysis) that the proposed project would comply with the MAAQS/NAAQS as well as the PSD Class I and Class II increments.

Deposition of pollutants would occur as a result of operating the facility, but the Department determined that the impacts from deposition of pollutants would be minor due to dispersion characteristics of pollutants (stack height, stack temperature, etc.), the atmosphere (wind speed, wind direction, ambient temperature, etc.), conditions that would be placed in Permit #4066-00, and the results of the ambient air quality modeling. Therefore, any impacts to air quality from the proposed facility would be minor.

G. Unique Endangered, Fragile, or Limited Environmental Resources

In an effort to identify any unique endangered, fragile, or limited environmental resources in the area, the Department contacted the Montana Natural Heritage Program, Natural Resource Information System (NRIS). The NRIS search identified *Centrocercus urophasianus* (Greater Sage-Grouse) and *Spizella breweri* (Brewer's Sparrow) as species of special concern located near the project area. In this case, the project area was defined by the section, township, and range of the proposed location with an additional 1-mile buffer zone. Due to the minor amounts of construction that would be required, the relatively low levels of pollutants that would be emitted, and because controlled emissions from the source would not cause or contribute to a violation of any ambient air quality standard, the Department determined that it would be unlikely that the proposed project would impact any species of special concern and that any potential impacts would be minor.

H. Demands on Environmental Resource of Water, Air and Energy

The proposed project would have minor impacts on the demands for the environmental resources of air, because the facility would be a minor source of air pollutants. Demands for water would be minor because the facility may use water for dust suppression. Deposition of

pollutants would occur as a result of operating the facility (as described in Section 7.F. of this EA); however, the Department determined that any impacts from deposition of pollutants would be minor.

The proposed project would be expected to have minor impacts on the demand for the environmental resource of energy because power would be required at the site. The impact on the demand for the non-renewable environmental resource of energy would be minor because the facility would continue to be relatively small by industrial standards. Overall, the impacts for the demands on the environmental resources of water, air, and energy would be minor.

I. Historical and Archaeological Sites

In an effort to identify any historical and archaeological sites near the proposed project area, the Department contacted the Montana Historical Society, State Historic Preservation Office (SHPO). According to SHPO records, there have been no previously recorded historic or archaeological sites within the proposed area. Given the previous industrial disturbances in the area, SHPO stated there would be a low likelihood that cultural properties would be impacted and that a recommendation to conduct a cultural resource inventory would be unwarranted. However, SHPO requested to be contacted by BCPL if cultural materials are discovered while implementing the project. Therefore, due to the previous disturbance in the area (the area is an active natural gas field) and the small amount of land disturbance that would be required to implement the proposed project, the Department determined than any impact to historical or archeological sites would be unlikely and any potential impacts would be minor.

J. Cumulative and Secondary Impacts

Overall, the cumulative and secondary impacts on the physical and biological aspects of the human environment in the immediate area would be minor due to the relatively small size of the project and negligible construction activities associated with this type of facility. The Department believes that this facility could be expected to operate in compliance with all applicable rules and regulations as would be outlined in Permit #4066-00.

Additional facilities (compressor stations, gas plants, etc.) could locate in the area to withdraw natural gas from the nearby area and/or to separate the components of natural gas. However, any future facility would be required to apply for and receive the appropriate permits from the appropriate regulating authority. Environmental impacts from any future facilities would be assessed through the appropriate permitting process.

9. The following table summarizes the potential economic and social effects of the proposed project on the human environment. The "no-action" alternative was discussed previously.

		Major	Moderate	Minor	None	Unknown	Comments Included
A	Social Structures and Mores			X			Yes
B	Cultural Uniqueness and Diversity			X			Yes
C	Local and State Tax Base and Tax Revenue			X			Yes
D	Agricultural or Industrial Production			X			Yes
E	Human Health			X			Yes
F	Access to and Quality of Recreational and Wilderness Activities			X			Yes
G	Quantity and Distribution of Employment			X			Yes
H	Distribution of Population			X			Yes
I	Demands for Government Services			X			Yes
J	Industrial and Commercial Activity			X			Yes
K	Locally Adopted Environmental Plans and Goals			X			Yes
L	Cumulative and Secondary Impacts			X			Yes

SUMMARY OF COMMENTS ON POTENTIAL ECONOMIC AND SOCIAL EFFECTS: The following comments have been prepared by the Department.

A. Social Structures and Mores
B. Cultural Uniqueness and Diversity

The proposed project would cause minor, if any, impacts to the above social and economic resources in the area because the proposed project would take place in a relatively remote location. Further, the proposed project would not necessitate any new permanent employees and would likely not result in any immigration of new people to the area for employment purposes; thereby, having little, if any, impact on the above social and economic resources of the area.

Additional activity (vehicle traffic, construction equipment, etc.) would be noticeable during facility construction. Once the facility is constructed, activities associated with the operation of the facility would be minor. Overall, any impacts to the above social and economic resources in the area would be minor.

C. Local and State Tax Base and Tax Revenue

The proposed project would result in minor impacts to the local and state tax base and tax revenue because no new employees would be expected as a result of the proposed project. However, the proposed project would necessitate negligible construction activities and typically would not require an extended period of time for completion. Therefore, any construction related jobs would be temporary and any corresponding impacts on the tax base/revenue in the area would be minor. Overall, any impacts to the local and state tax base and tax revenue would be minor.

D. Agricultural or Industrial Production

The land at the proposed location would be considered rural agricultural grazing land. However, because the facility would be relatively small, the proposed project would result in only minor impacts to agricultural production. The proposed project would result in minor impacts to industrial production because the proposed project would be a new industrial source. However, because the facility would be relatively small by industrial standards, only minor impacts to industrial production would be expected.

Additional facilities (compressor stations, gas plants, etc.) could locate in the area to withdraw natural gas from the nearby area and/or to separate the components of natural gas. However, any future facility would be required to apply for and receive the appropriate permits from the appropriate regulating authority. Environmental impacts from any future facilities would be assessed through the appropriate permitting process. The Department is not aware of plans for any additional facilities at this time. Overall, any impacts to agricultural or industrial production of the area would be minor.

E. Human Health

The proposed project would result in minor, if any, impacts to human health. Deposition of pollutants would occur (as described in Section 7.F. of this EA); however, the Department determined that the proposed project would comply with all applicable air quality rules, regulations, and standards. These rules, regulations, and standards are designed to be protective of human health. Overall, any impacts to public health would be minor.

F. Access to and Quality of Recreational and Wilderness Activities

The proposed project would have minor, if any, impacts on access to recreational and wilderness activities because of the relatively remote location, the relatively small size of the facility, and because the facility is within an active natural gas field. The proposed project would have minor impacts on the quality of recreational and wilderness activities in the area because the facility, while relatively small by industrial standards, would produce additional noise and would be visible. Overall, any impacts to the access and quality of recreational and wilderness activities in the area would be minor.

G. Quantity and Distribution of Employment
H. Distribution of Population

The proposed project would have minor, if any, impacts on the employment and population of the area because no new employees would be required for normal operations thereby resulting in no new immigration to the area. However, temporary construction-related positions would result from this project. However, any impacts to the quantity and distribution of employment from construction related employment would be minor due to the relatively small size of the facility and the relatively short time period that would be required for constructing the facility. Overall, any impacts to the above social and economic resources in the area would be minor.

I. Demands for Government Services

There would be minor impacts on the demands for government services because additional time would be required by government agencies to issue the appropriate permits for the facility and to assure compliance with applicable rules, standards, and conditions that would be contained in those

permits. In addition, there would be minor impacts on the demands for government services to regulate the increase in vehicle traffic that would be associated with constructing the facility. The increase in vehicle traffic would be primarily during facility construction. Therefore, impacts from vehicle traffic would be relatively minor due to the relatively short time period that would be required to construct the facility. Overall, any demands for government services to regulate the facility or activities associated with the facility would be minor due to the relatively small size of the facility.

J. Industrial and Commercial Activity

Only minor impacts would be expected on the local industrial and commercial activity because the proposed project would represent only a minor increase in the industrial and commercial activity in the area. The proposed project would be relatively small, would take place at a relatively remote location, and would occur in an active natural gas field.

Additional facilities (compressor stations, gas plants, etc.) could locate in the area to withdraw natural gas from the nearby area and/or to separate the components of natural gas. However, any future facility would be required to apply for and receive the appropriate permits from the appropriate regulating authority. Environmental impacts from any future facilities would be assessed through the appropriate permitting process. Overall, any impacts to the local industrial and commercial activity of the area would be minor.

K. Locally Adopted Environmental Plans and Goals

The EIS that was completed to analyze the potential impacts from coal bed methane exploration, production, development, and reclamation activities in Montana would be considered an environmental plan or goal for the proposed project. The proposed Decker #17 Battery would be constructed and operated within the scope of the EIS.

L. Cumulative and Secondary Impacts

Overall, cumulative and secondary impacts from this project would result in minor impacts to the economic and social aspects of the human environment in the immediate area. Due to the relatively small size of the project, the industrial production, employment, and tax revenue (etc.) impacts resulting from the proposed project would be minor. In addition, the Department believes that this facility could be expected to operate in compliance with all applicable rules and regulations as would be outlined in Permit #4066-00.

Additional facilities (compressor stations, gas plants, etc.) could locate in the area to withdraw natural gas from the nearby area and/or to separate the components of natural gas. However, any future facility would be required to apply for and receive the appropriate permits from the appropriate regulating authority. Environmental impacts from any future facilities would be assessed through the appropriate permitting process.

Recommendation: No EIS is required.

If an EIS is not required, explain why the EA is an appropriate level of analysis: The current permit action is for the construction and operation of a coal bed methane natural gas compressor station. A programmatic EIS was prepared for coal bed methane development in Montana. A copy of the final EIS can be obtained on the Department's web site at

http://www.deq.state.mt.us/CoalBedMethane/finaleis.asp. This EA assesses the impacts specific to the proposed BCPL Decker #17 Compressor Station and Permit #4066-00 would include conditions and limitations to ensure the facility would operate in compliance with all applicable air quality rules and regulations. In addition, there are no significant impacts associated with the proposed facility.

Other groups or agencies contacted or which may have overlapping jurisdiction: Montana Historical Society – State Historic Preservation Office; Natural Resource Information System – Montana Natural Heritage Program; Bureau of Land Management, Montana Board of Oil and Gas Conservation; United States Fish and Wildlife Service; Montana Bureau of Mines and Geology; Montana Department of Fish, Wildlife, and Parks; Montana Department of Natural Resources and Conservation; Crow Tribe of Indians; Northern Cheyenne Tribe; and Lower Brule Sioux Tribe.

Individuals or groups contributing to this EA: Montana Department of Environmental Quality; Montana Historical Society – State Historic Preservation Office; Natural Resource Information System – Montana Natural Heritage Program; Bureau of Land Management, Montana Board of Oil and Gas Conservation; United States Fish and Wildlife Service; Montana Bureau of Mines and Geology; Montana Department of Fish, Wildlife, and Parks; Montana Department of Natural Resources and Conservation; Crow Tribe of Indians; Northern Cheyenne Tribe; and Lower Brule Sioux Tribe.

EA prepared by: Dave Aguirre
Date: April 9, 2007